'HOME' ENTERED AT 11:34:49 ON 10 MAR 1999)

FILE 'INSPEC' ENTERED AT 11:35:01 ON 10 MAR 1999

```
L1         45733 IMPLANT?
L2          8743 CADMIUMTELLURIDE OR CDTE
L3         13953 (AR OR ARGON)(4A)(ION# OR ATOM#)
L4          1600 CADMIUM TELLURIDE
L5          9195 L2 OR L4
L6        138697 OBLIQUE OR ANGLE
L7          1321 L1(P)L3
L8            58 L7(P)L6
L9             0 L5 AND L8
L10           58 L7 AND L6
L11            0 L5 AND L10
L12       117588 45 OR 90
L13            8 L10(P)L12
L14            0 FILW WPIDS
```

FILE 'WPIDS' ENTERED AT 11:41:58 ON 10 MAR 1999

```
L15            5 L10
```

FILE 'CA' ENTERED AT 11:43:51 ON 10 MAR 1999

```
L16           80 L10
L17            0 L16 AND L5
L18         5413 COMPOUND SEMICONDUCTOR#
L19            0 L17 AND L18
L20       649821 SEMICONDUCTOR# OR SILICON
L21         5413 L18 AND L20
L22            0 L16 AND L21
L23           31 L16 AND L20
```

```
=> d 123 5, 11, 14, 22 all
```

L23 ANSWER 5 OF 31 CA COPYRIGHT 1999 ACS
AN 124:124693 CA
TI Ion beam assisted deposition of ZrO2 thin films
AU Neubeck, K.; Nitsche, R.; Hahn, H.; Alberts, L.; Wolf, G. K.; Friz, M.
CS Materials Science Dep., Technical Univ. Darmstadt, Darmstadt, Germany
SO Nucl. Instrum. Methods Phys. Res., Sect. B (1995), 106(1-4), 110-15
CODEN: NIMBEU; ISSN: 0168-583X
DT Journal
LA English
CC 57-2 (Ceramics)
AB Microstructure and properties of thin films can be modified by ion beam irradn. during growth. The stoichiometry, d., crystallinity, and texture of ZrO2 films deposited under ion beam impact on glassy carbon and **silicon** single crystals were investigated. Argon ion beams with an energy of 10 keV and a c.d. of 40 .mu.A/cm2 were used during electron beam evapn. of ZrO2 pellets with a rate of 0.25 nm/s. The **angle** between substrate normal and ion beam was set at 0.degree., 15.degree. and
55.degree.. Stoichiometry of the films was analyzed by RBS. Film d. was calcd. from combined RBS anal. and thickness measurements by profilometer and spectrophotometer. Phase content, crystallinity, and texture were investigated by X-ray diffraction (XRD), four pole measurements and high resoln. transmission electron microscopy (HRTEM). Influence of the **angle** of incidence of ions on texture will be discussed.
ST zirconia coating property ion beam deposition
IT Vapor deposition processes

(electron beam evapn.; stoichiometry, d., crystallinity, and texture of ZrO2 films deposited under argon ion beam impact during electron beam evapn. on glassy carbon and **silicon** single crystals)

IT **Ions** in solids
(**implanted**, **argon**; stoichiometry, d., crystallinity, and texture of ZrO2 films deposited under **argon ion** beam impact during electron beam evapn. on glassy carbon and **silicon** single crystals)

IT 1314-23-4, Zirconium oxide (ZrO2), processes
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(coatings; stoichiometry, d., crystallinity, and texture of ZrO2 films deposited under argon ion beam impact during electron beam evapn. on glassy carbon and **silicon** single crystals)

IT 7440-44-0, Carbon, uses
RL: NUU (Nonbiological use, unclassified); USES (Uses)
(glassy, substrates; stoichiometry, d., crystallinity, and texture of ZrO2 films deposited under argon ion beam impact during electron beam evapn. on glassy carbon and **silicon** single crystals)

IT 7440-21-3, **Silicon**, uses
RL: NUU (Nonbiological use, unclassified); USES (Uses)
(substrates; stoichiometry, d., crystallinity, and texture of ZrO2 films deposited under argon ion beam impact during electron beam evapn. on glassy carbon and **silicon** single crystals)

L23 ANSWER 11 OF 31 CA COPYRIGHT 1999 ACS
AN 119:192839 CA
TI Optical investigation of implantation damage in gallium arsenide/aluminum gallium arsenide quantum wells
AU Kieslich, A.; Straka, J.; Forchel, A.; Stoffel, N. G.
CS Univ. Wuerzburg, Wuerzburg, D-8700, Germany
SO Nucl. Instrum. Methods Phys. Res., Sect. B (1993), B80-81(Pt. 1), 616-19
CODEN: NIMBEU; ISSN: 0168-583X
DT Journal
LA English
CC 76-3 (Electric Phenomena)
AB The authors used optical spectroscopy to study the depth range distribution of **Ar+ implantation** induced damage at **ion** energies between 15 and 170 keV. The photoluminescence efficiency of **implanted** GaAs/(Ga,Al)As quantum wells is detd. as a function of the ion energy and the **angle** of incidence. The evidence for damage by channeled ions is investigated by varying the incidence **angle** of the **Ar ion** beam through the major crystallog. axes of the sample. **Implantations** along the axial channels of the zinc-blende crystal lead to a dramatic decay of the photoluminescence intensity from quantum wells much deeper than in the case of random incidence. In particular, channeling simulations with a new mol. dynamics program reproduce the exptl. obsd. energy and angular dependence of the damage due to channeled ions.
ST arsenide IIIA quantum well **implantation** damage; aluminum gallium arsenide well **implantation** damage; **argon ion implantation** IIIA arsenide well; luminescence IIIA arsenide well **implantation** damage
IT Luminescence
(of **argon-ion-implanted** gallium arsenide/aluminum gallium arsenide quantum-well structures)

IT **Semiconductor** devices
(quantum-well, gallium arsenide/aluminum gallium arsenide, implantation damage in, optical study of)

IT 14791-69-6, Argon(1+), properties
RL: PRP (Properties)
(damage in gallium arsenide/aluminum gallium arsenide quantum-well

structures implanted with, optical study of)
IT 1303-00-0, Gallium [redacted]oarsenide, uses
RL: USES (Uses)
(implantation damage in quantum-well structures from aluminum gallium arsenide and, optical study of)
IT 106070-09-1, Aluminum gallium arsenide (Al0.3Ga0.7As)
RL: USES (Uses)
(implantation damage in quantum-well structures from gallium arsenide and, optical study of)

L23 ANSWER 14 OF 31 CA COPYRIGHT 1999 ACS
AN 118:91967 CA
TI Investigation of random and channeling argon(1+) implantation-induced damage in aluminum (indium) gallium arsenide/gallium arsenide quantum wells
AU Kieslich, Albrecht; Straka, Josef; Forchel, Alfred
CS Univ. Wuerzburg, Wuerzburg, D-8700, Germany
SO Jpn. J. Appl. Phys., Part 1 (1992), 31(12B), 4428-32
CODEN: JAPNDE; ISSN: 0021-4922
DT Journal
LA English
CC 76-3 (Electric Phenomena)
AB **Ar+ ion implantation** at energies up to 170 keV in GaAs/GaAlAs and InGaAs/GaAs quantum wells is used to study the profile of the **implantation** induced damage as a function of the **implantation** parameters like the ion energy, the ion dose and the **angle** of incidence. The photoluminescence (PL) emission intensity of single quantum wells (SQW) at different positions in the layer structure is used as a local probe for the study of the damage. The influence of ion channeling on the damage is studied by varying the **angle** of incidence of the ion beam systematically through the major crystallog. axes of the sample. The authors observe even for random **implantation** a wide extension of the defect profiles, which can be described by a characteristic decay length due to a long ranging exponential tail of the damage profile. Compared to the results of random incidence ion **implantation** along the (100), (110), (111), and (211) axis leads to effective extensions of the damage up to a factor of .apprx.4 due to ion channeling.
ST quantum well damage **argon ion implantation**; aluminum gallium arsenide quantum well; gallium arsenide quantum well
IT Luminescence
(of aluminum gallium arsenide-gallium arsenide quantum wells, **argon ion implantation** effect on)
IT **Semiconductor** devices
(quantum-well, aluminum gallium arsenide-gallium arsenide, damage in, induced by **argon ion implantation**)
IT 14791-69-6, **Argon ion**(1+), miscellaneous
RL: MSC (Miscellaneous)
(damage induced by **implantation** of, in gallium arsenide-aluminum gallium arsenide quantum wells)
IT 1303-00-0, Gallium arsenide, miscellaneous
RL: MSC (Miscellaneous)
(quantum well from, with aluminum gallium arsenide, damage in, induced by arsenic ion implantation)
IT 37382-15-3, Aluminum gallium arsenide ((Al,Ga)As)
RL: USES (Uses)
(quantum well from, with gallium arsenide, damage in, induced by **argon ion implantation**)

L23 ANSWER 22 OF 31 CA COPYRIGHT 1999 ACS
AN 101:158173 CA
TI The applications of acoustic methods to study the properties of implanted layers
AU Adliene, D.; Basin, V.; Daugela, J.; Joneliunas, S.; Pranevicius, L.

CS Kaunas Polytech. Inst., Kaunas, USSR
SO Proc. Int. Ion Eng. Congr. (1983), Volume 3, 1849-54. Editor(s): Takagi, Toshinori. Publisher: Int. Ion Eng. Congr., Kyoto, Japan.
CODEN: 52KDA2
DT Conference
LA English
CC 65-6 (General Physical Chemistry)
Section cross-reference(s): 75, 76
AB During **implantation** of 100-keV He+ and **Ar+** **ions** in glass and Si, the velocity [V] (as obsd. by SEM) of the surface acoustic waves increased, which were used to study the **implantation**. The obsd. increases in V were interpreted in terms of changes in the surface shear modulus and d. caused by the ion **implantation**. For a LiNbO3 crystal **implanted** with 100-keV H+ ions along the (111) channel, the backscattering of channeling 500-keV protons was used to study the ion-beam-induced acoustic-emission intensity (I) as a function of the **angle** (.theta.) of disorientation between the ion beam and the (111) channel. The values of I and the no. of backscattered protons were min. for .theta. = 00.
ST surface acoustic wave ion **implantation**; helium ion **implantation** glass **silicon**; **argon ion** **implantation** glass **silicon**; **silicon** **implantation argon** helium **ion**; glass **implantation argon** helium **ion**; sound emission ion beam induced; channeling proton lithium niobate sound; backscattering proton lithium niobate sound
IT Glass, oxide
Glass, oxide
RL: PRP (Properties)
(**implantation** of **argon** and helium **ions** in, surface-acoustic-wave velocity in study of)
IT Sound and Ultrasound, chemical and physical effects
(in ion implantation study in glass and **silicon**)
IT Sound and Ultrasound
(ion-beam-induced emission of, from lithium niobate, proton backscattering in study of)
IT 7440-21-3, properties
RL: PRP (Properties)
(**implantation** of **argon** and helium **ions** in, surface-acoustic-wave velocity in study of)
IT 14234-48-1, properties 14791-69-6, properties
RL: PRP (Properties)
(implantation of, in glass and **silicon**, surface-acoustic-wave velocity in study of)
IT 12586-59-3, chemical and physical effects
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(in ion-beam-induced acoustic emission study)
IT 12031-63-9
RL: PRP (Properties)
(ion-beam-induced acoustic emission from, proton backscattering in study of)